

WHAT IS CLAIMED IS:

1. A content playback method of playing back content data transferred over network from at least one content distribution device, the method comprising:

5 inputting scene descriptive information to specify a time based order regarding playback of content data;
 receiving and playing back a piece of the content data according to the scene descriptive information;
 measuring an available bandwidth of the network;
10 requesting the content distribution device to transfer a subsequent piece of the content data based on the scene descriptive information when the available bandwidth exists.

2. A content playback method according to
15 claim 1, wherein requesting the content distribution device includes requesting the content distribution device to prepare transferring only content data belonging to a block immediately after in time a block belonging to content data under playback when only
20 download type object is played back.

3. A content playback method of playing back content data transferred over a network from at least one content distribution device, the method comprising:

 transferring a scene description file from the
25 content distribution device to a client terminal according to a file transfer requested by a user;
 dividing a singular block or a plurality of blocks

including objects to be played back simultaneously;

downloading download type objects included in the block from the content distribution device to the client terminal;

5 taking in stream type objects included in the file from the content distribution device to the client terminal;

playing back a block including the stream type objects and download type objects.

10 examining whether a block to be played back next exists,

requesting the content distribution device to transfer a stream type object existing in the block to be played back next;

15 examining whether the network has an available bandwidth; and

buffering the stream type object to be played back next according to the available bandwidth.

20 4. A content playback method according to claim 3, wherein requesting the content distribution device includes requesting the content distribution device to prepare transferring only content data belonging to a block immediately after in time a block belonging to content data under playback when only
25 download type object is played back.

5. A content playback apparatus which plays back content data transferred over a network from at least

one content distribution device, the apparatus
comprising:

an input device which inputs scene descriptive
information to specify a time based order regarding
5 playback of content data;

a playback device which receives and plays back
a piece of the content data according to the scene
descriptive information;

a measuring device which measures an available
10 bandwidth of the network;

a transfer request device which requests the
content distribution device to transfer a subsequent
piece of the content data based on the scene
descriptive information when the available bandwidth
15 exists.

6. A content playback apparatus according to
claim 5, wherein the transfer request device requests
the content distribution device to transfer the
subsequent piece of the content data with a transfer
20 rate not more than the available bandwidth.

7. A content playback apparatus according to
claim 5, wherein the transfer request device requires
the content distribution device to transfer only the
piece of the content data which is stream type data.

25 8. A content playback apparatus according to
claim 7, wherein the transfer request device requires
the content distribution device to transfer

the subsequent piece of the content data corresponding to a given amount capable of starting the playback.

9. A content playback apparatus according to claim 7, wherein the transfer request device determines a playback finish time of the piece of the content data under playback based on the scene descriptive information, and requests the content distribution device to complete transferring the subsequent piece of the content data of a given amount capable of starting the playback by an playback finish time.

10. A content playback apparatus according to claim 5, wherein the transfer request device divides a singular data or a plurality of content data corresponding to the scene descriptive information into a singular block or a plurality of blocks including objects to be played back simultaneously, and requests the content distribution device to transfer only content data belonging to a block immediately after in time a block belonging to content data under playback.

11. A content playback apparatus according to claim 10, wherein the transfer request device requests the content distribution device to transfer the subsequent piece of the content data with a transfer rate not more than the available bandwidth.

12. A content playback apparatus according to claim 10, wherein the transfer request device requires the content distribution device to transfer only the

piece of the content data which is stream type data.

13. A content playback apparatus according to claim 12, wherein the transfer request device requires the content distribution device to transfer the subsequent piece of the content data corresponding to a given amount capable of starting the playback.

14. A content playback apparatus according to claim 12, wherein the transfer request device determines a playback finish time of the content data under playback based on the scene descriptive information, and requests the content distribution device to complete transferring the subsequent piece of the content data of an amount capable of starting the playback by an playback finish time.

15. A content playback apparatus according to claim 5, wherein the transfer request device requests the content distribution device to prepare transferring only content data belonging to a block immediately after in time a block belonging to content data under playback when only download type object is played back.

16. A content playback method of playing back content data transferred over network from at least one content distribution device, the method comprising:

inputting a time based order regarding playback of a piece of the content data and scene descriptive information to specify whether the content data is download type data or stream type data; and

requesting the content distribution device to prepare transferring a subsequent piece of the content data of the stream type data based on the scene descriptive information.

5 17. A content playback method according to claim 16, wherein requesting the content distribution device requests the content distribution device to prepare transferring only content data belonging to a block immediately after in time a block belonging to
10 content data under playback when only download type object is played back.

18. A content playback apparatus which plays back content data transferred over a network from at least one content distribution device, the apparatus
15 comprising:

an input device which inputs a time based order regarding playback of a piece of the content data and scene descriptive information to specify whether the piece of the content data is download type data or
20 stream type data; and

a transfer request device which requests the content distribution device to prepare the transfer of a subsequent piece of the content data of the stream type data based on the scene descriptive information.

25 19. A content playback apparatus according to claim 18, wherein the transfer request device divides a singular content data or a plurality of content data

corresponding to the scene descriptive information into
a singular block or a plurality of blocks to be played
back simultaneously, and requests the content
distribution device to prepare transferring only
5 content data belonging to a block immediately after in
time a block belonging to content data under playback.

20. A content playback apparatus according to
claim 19, wherein the transfer request device requests
the content distribution device to prepare transferring
10 only content data belonging to a block immediately
after in time a block belonging to content data under
playback when only download type object is played back.

21. A content playback program recorded on
a computer readable medium to make a computer to play
15 back content data transferred over network from at
least one content distribution device, the program
comprising:

means for instructing the computer to input scene
descriptive information to specify a time based order
20 regarding playback of a piece of the content data;

means for instructing the computer to receive and
play back the content data according to the scene
descriptive information; means for instructing the
computer to measure an available bandwidth of the
25 network,

means for instructing the computer to request the
content distribution device to transfer a subsequent

piece of the content data based on the scene
descriptive information when the available bandwidth
exists.

22. A content playback program recorded on
5 a computer readable medium to make a computer to play
back content data transferred over network from at
least one content distribution device, the program
comprising:

10 means for instructing the computer to input a time
based order regarding playback of a piece of the
content data and scene descriptive information to
specify whether the content data is download type data
or stream type data; and

15 means for instructing the computer to request
the content distribution device to prepare transferring
a subsequent piece of the content data of the stream
type data based on the scene descriptive information.

10084401.030702